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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/550,762

11/14/2005

Outi Aho

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EXAMINER

NELSON, MICHAEL B

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/550,762	Applicant(s) AHO ET AL.	
	Examiner MICHAEL B. NELSON	Art Unit 4145	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
 4a) Of the above claim(s) 16-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>09/27/05</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-15, drawn to a multilayer product.

Group II, claim(s) 16-33, drawn to a method for producing a multilayer product.

2. The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical feature, which is the multilayer product with a first cellulosic layer and a second electrically conductive layer thereon and underneath the surface of the product, while shared between all inventions, does not define a contribution which each of the claimed inventions considered as a whole, makes over the prior art because, Schwark et al. (U.S. 6,162,596) discloses a multilayer product with a paper support and an electrically conductive layer thereon, wherein the electrically conductive layer is fitted under the surface.

3. During a telephone conversation with John Forrest on 04/21/08 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-15. Affirmation of this election must be made by applicant in replying to this Office action. Claims 16-33 are

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withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Specification

5. The use of the trademarks has been noted in this application. They should be capitalized wherever they appear and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 4, 7 and 14 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Regarding claim 4, the list of binder compositions is vague and indefinite in that it is unclear which limitation is intended (i.e. *1: all of dextrin and carboxymethyl cellulose and polyvinyl alcohol and polyvinyl acetate or one of a binder based on starch or a starch derivative, or 2: one of dextrin or carboxymethyl cellulose or polyvinyl alcohol or polyvinyl acetate or a binder based on starch or a starch derivative*). This phrase is vague and indefinite in that it is unclear which parts of the list are included in alternative and which are included together. For the purposes of advancing prosecution, the binder will be taken as being selected from any one of the binders listed (i.e. dextrin or carboxymethyl cellulose or polyvinyl alcohol or polyvinyl acetate or a binder based on starch or a starch derivative). It would be remedial to add the phrase "at least one" or "one selected from" before the word dextrin.

Regarding claim 7, the phrase "unsymmetrical paper or cardboard webs" is recited. This phrase is vague and indefinite in that it is unclear if the cardboard webs are limited to being unsymmetrical. For the purposes of advancing prosecution, the phrase in question will be taken as limiting the fibrous webs to unsymmetrical paper or unsymmetrical or symmetrical cardboard webs.

Regarding claim 14, the phrase "locally adjusted" is recited. This phrase is vague and indefinite in that it is unclear which, if any, positive process limitations are included for forming the pattern. For the purposes of advancing prosecution, the phrase in question will be taken as limiting the pattern only in that the layer must comprise conductive and non-conductive sections (i.e. any locality and any method of formation or adjustment).

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-13, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Schwark et al. (U.S. 6,162,596).

Regarding claim 1, Schwark et al. discloses a multilayered product comprising

- at least one first layer, which is formed by cellulosic or lignocellulosic fibres,
- at least one second layer, which is fitted adjacent to the first layer or at a distance therefrom, characterized in that the second layer is fitted under the surface of the product and the second layer contains a synthetic, electrically conductive polymer, which is mixed with a binder which forms a binder matrix, whereby the second layer is at least partially electrically conductive.

(See C4, L1-30, in the laminate a support is disclosed, which can be made of natural paper (C4, L52-60), and a layer of electrically conductive polymer mixed in a binder matrix. See C6, L10-30, the electrically conductive polymer (i.e. the antistatic layer) is disclosed as being on the opposite side of the backing layer as the image forming layer and optionally having a topcoat further applied thereon for protection.)

Regarding claims 2-4, Schwark et al. discloses all of the claimed limitations as set forth above. Additionally, the reference discloses a multilayered product

- characterized in that the binder forms a homogeneous mixture together with the electrically conductive polymer
- characterized in that the binder of the second layer comprises a binder that dissolves or disperses in water.
- characterized in that the binder comprises dextrin, carboxymethyl cellulose, polyvinyl alcohol, polyvinyl acetate or a binder based on starch or a starch derivative.

(See C9, L50-60, the disclosed addition of dispersing agents ensure homogeneity of the mixture. See C7, L40-55 and C9, L30-45, the binder is disclosed as being inter alia carboxymethyl cellulose and is disclosed as being soluble and dispersible in water.)

Regarding claims 5, 8-10 and 15, Schwark et al. discloses all of the claimed limitations as set forth above. Additionally, the reference discloses a multilayered product

- characterized in that it comprises two first layers which have been bonded together by a second layer fitted in between them.
- characterized in that it further comprises a third layer which is arranged on top of the first or the second layer.
- characterized in that the third layer is formed by a plastic film, which has been extruded on the surface of the product.
- characterized in that the third layer is formed by a layer of a coating colour.

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- characterized in that the surface of the multilayered product is provided with a visual marking which indicates the layer containing the electrically conductive polymer.

(See C4, L1-15, the general invention is an at least three layer composite, with all three layers bound together and with a layer, the support, in between the two outer layers. The third layer, the antistatic layer, is disclosed as being on the outside (i.e. on top) of the other layers (C6, L10-27). The antistatic layer is disclosed as being laminated to the support by extrusion and optionally with adhesive tie layers (C5, L30-45) and is disclosed as containing pigments (C4, L10-30), which would make it a layer of coating color and also provide visual identification of the antistatic layer.)

Regarding claims 6 and 7, Schwark et al. discloses all of the claimed limitations as set forth above. Additionally, the reference discloses a multilayered product

- characterized in that the first layers are formed by fibrous webs.
- characterized in that the fibrous webs are formed by unsymmetrical paper or cardboard webs.

(See C4, L40- C5, L30, natural paper, which is a fibrous cellulose web, is disclosed as being coated on one side, the side adjacent to the antistatic layer, with adhesion promoter, which makes it unsymmetrical.)

Regarding claims 11-13, Schwark et al. discloses all of the claimed limitations as set forth above. Additionally, the reference discloses a multilayered product

- characterized in that the second layer contains an electrically conductive polymer selected from the group of polyaniline, polypyrrol and polythiophene.

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- characterized in that the concentration of the electrically conductive polymer in the second layer is about 0.1 to 10 weight-%.
- characterized in that surface resistivity of the second layer is about 10×10^2 to 10×10^{11} Ohm.

(See C7, L5-40, thiophenes are disclosed as being the electrically conductive polymer. See C9, L40-55, the proportion of the electrically conductive polymer to the binder resin is disclosed as being 0.1-99 wt%, which completely overlaps the claimed range, and preferably between 2-70 wt%, with the lower endpoint lying within the claimed range. See Tables 1 and 2, C11 and C12, the surface resistivity (SER) of the examples lie within the claimed range (i.e. example 2, $10^{6.9}$ ohms).)

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schwark et al. (U.S. 6,162,596) as applied to claim 1 above, and further in view of Angelopoulos et al. (U.S. 5,759,637).

Regarding claim 14, Schwark et al. discloses all of the claimed limitations as set forth above.

Schwark et al. does not disclose a multilayered product characterized in that the electrical conductivity of the electrically conductive polymer of the second layer is locally adjusted to form a pattern of electrical conductivity or electrical non-conductivity, respectively.

Angelopoulos et al. discloses a multilayered product characterized in that the electrical conductivity of the electrically conductive polymer of the second layer is locally adjusted to form a pattern of electrical conductivity or electrical non-conductivity, respectively.

(See Example 4, C9, L10-50, the electrically conductive polymer composition is selectively cross linked with a mask and then locally adjusted by dissolving away the uncrosslinked portions to form a pattern with areas of conductive and non-conductive

polymer. This method of making electrically conductive laminates can be used to form circuit patterns.)

The inventions of both Schwark et al. and Angelopoulos et al. are drawn to the field of laminates with electrically conductive polymer layers and therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the electrically conductive polymer layer of Schwark et al. by forming the layer with the pattern of Angelopoulos et al. for the purposes of imparting a circuit pattern and thereby increasing economic applicability.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL B. NELSON whose telephone number is (571)270-3877. The examiner can normally be reached on Monday through Thursday 6AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basia Ridley can be reached on (571) 272-1453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gwendolyn Blackwell/
Primary Examiner, Art Unit 1794

/MN/
04/16/08